

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A thrombus detecting apparatus comprising:

a transducer, which is attached to a monitor portion of a subject and transmits and receives ultrasonic waves, a transmitter and receiver unit, which transmits and applies driving pulses to the transducer and receives echo signals output from the transducer, and

a detector making use of ultrasonic waves, which processes output signals of the transmitter and receiver unit and detects a thrombus passing through a blood vessel, and/or

a light source, which generates living body inspection light,

a probe, which is attached to a monitor portion of the subject and irradiates the living body inspection light from the light source to the subject,

a light receiving unit, which receives living body inspection light irradiated from the probe and passed through the subject and outputs electrical signals depending on the intensity of the received living body inspection light, and

a detector making use of living body light, which processes the output signals of the light receiving unit and detects a thrombus passing through a blood vessel,

characterized in further comprising a thrombus comprising a thrombus counting unit, which counts the number of thrombus by combining thrombus detected by the detector making use of ultrasonic waves and thrombus detected by the detector making use of living body light.

2. (Currently Amended) A thrombus detecting apparatus according to claim 1, characterized in ~~that the thrombus detecting apparatus further comprising an alarm device, which generates an alarm based on the detection result~~number of thrombus of the detector making use of ultrasonic waves and/or making use of living body light counted by the thrombus counting unit.

3. (Original) A thrombus detecting apparatus according to claim 1 or 2, characterized in that the thrombus detecting apparatus further comprising a portable self power source.

4. (Currently Amended) A thrombus treating apparatus ~~comprising~~comprising:
a transducer, which is attached to a monitor portion of a subject and transmits and receives ultrasonic waves,
a transmitter and receiver unit, which transmits and applies driving pulses to the transducer and receives echo signals output from the transducer, and
a detector making use of ultrasonic waves, which processes output signals of the transmitter and receiver unit and detects a thrombus passing through a blood vessel, and
a light source, which generates living body inspection light,
a probe, which is attached to a monitor portion of the subject and irradiates the living body inspection light from the light source to the subject,
a light receiving unit, which receives living body inspection light irradiated from the probe and passed through the subject and outputs electrical signals depending on the intensity of the received living body inspection light,
a detector making use of living body light, which processes the output signals

of the light receiving unit and detects a thrombus passing through a blood vessel,
characterized in further comprising a thrombus counting unit, which counts the
number of thrombus which by combining thrombus detected by the detector making
use of ultrasonic waves and thrombus detected by the detector making use of living
body light, and

~~the thrombus detecting apparatus according to claim 1, 2 or 3, which is~~
~~provided with a treatment use ultrasonic wave generating device, which transmits~~
~~transmitting ultrasonic waves for dissolving a thrombus flowing through the blood~~
~~vessel based on the detection result of the detector making use of ultrasonic waves~~
~~and/or making use of living body light counted number of the thrombus.~~

5. (Original) A thrombus treating apparatus according to claim 4, characterized in
that the thrombus treating apparatus further comprising:

a living body light measurement apparatus, which observably displays a state
of blood stream in the blood vessel, and

an injection device, which injects thrombus dissolving agent into the blood
vessel depending on the state of blood stream in the blood vessel observed by the
living body light measurement apparatus.

6. (Original) A thrombus treating apparatus according to claim 5, characterized in
that the thrombus treating apparatus further comprising:

a control device, which monitors the injection amount of the thrombus
dissolving agent by the injection device and the transmission time of the ultrasonic
waves by the treatment use ultrasonic generating device and adjusts and controls
the injection amount and the irradiation time.

7. (Original) A thrombus treating apparatus according to claim 6, characterized in that the thrombus treating apparatus further comprising:

a thrombus dissolving agent activation use ultrasonic wave generating device, which transmits ultrasonic waves for activating the thrombus dissolving agent injected into the blood vessel from the injection device attached to the subject.

8. (Currently Amended) A thrombus ~~treating~~ detecting method comprising:

a step of transmitting ~~and/or~~ and irradiating ultrasonic waves ~~and/or~~ and living body inspection light from an ultrasonic wave transducer ~~and/or~~ and a living body light measurement probe attached at a monitor portion of a subject toward a blood vessel at the monitor portion,

a step of measuring echo signals and/or penetrating living body light from the blood vessel at the monitor portion, and

a step of ~~detecting~~ counting a number of thrombus flowing in the blood vessel at the monitor portion based on a combination of the intensity of the measured echo signals ~~and/or~~ and penetrating living body light.

9. (Original) A thrombus ~~treating~~ detecting method according to claim 8 further comprising:

a step of generating an alarm when the thrombus detection number in the ~~detecting~~ counting step reaches a predetermined number.

10. (Currently Amended) A thrombus treating method ~~according to claim 8 or 9~~ further comprising:

a step of transmitting and irradiating ultrasonic waves and living body inspection light from an ultrasonic wave transducer and living body inspection light from an ultrasonic wave transducer and a living body light measurement probe attached at a monitor portion of a subject toward a blood vessel at the monitor portion.

a step of measuring echo signals and penetrating living body light from the blood vessel at the monitor portion.

a step of counting a number of thrombus flowing in the blood vessel at the monitor portion based on a combination of the intensity of the measured echo signals and penetrating living body light, and

a step of transmitting treatment use ultrasonic waves toward the blood vessel from the treatment use transducer attached to the subject for dissolving a thrombus passing through the blood vessel when a thrombus is ~~detected~~counted in the ~~detecting~~counting ~~step or when an alarm is generated in the alarming step.~~

11. (Original) A thrombus treating method according to claim 10 further comprising:

a step of observing and displaying a state of blood stream in the blood vessel by attaching a living body light measurement apparatus to the subject,

a step of injecting a thrombus dissolving agent into the blood vessel depending on the observed and displayed state of blood stream in the blood vessel.

12. (Original) A thrombus treating method according to claim 11 further comprising:

a step of monitoring the transmission time of the treatment use ultrasonic

waves and the injection amount of the thrombus dissolving agent and interrupting the transmission of the treatment use ultrasonic waves and the injection of the thrombus dissolving agent when a predetermined transmission time and a predetermined amount are reached.

13. (Original) A thrombus treating method according to claim 12 further comprising:

a step of transmitting thrombus dissolving agent activation use ultrasonic waves for activating the injected thrombus agent toward the blood vessel.